

AMENDMENTS TO THE CLAIMS

Please cancel claims 24-32 and add new claim 34 in the manner set forth below.

1.-6. (Previously Cancelled)

7. (Previously Presented) A gas separator according to claim 23, wherein at least one of a honey-comb member and a fin member is provided in the interior portion of each of the blocks.

8.-9. (Previously Cancelled)

10. (Previously presented) A gas separator according to claim 23, wherein the specific gas is carbon dioxide and the gas absorption/releasing material is a lithium based material which reacts with the carbon dioxide to generate lithium carbonate thereby to absorb carbon dioxide and which releases the carbon dioxide by decomposition of the carbonate.

11. (Currently Amended) A gas separator according to claim 10, wherein the second temperature zone is heated by the second temperature control gas ~~has having~~ a temperature of approximately 500°C while the first temperature zone is heated by the first temperature control gas ~~has having~~ a temperature of over approximately 700°C.

12.-22. (Previously Cancelled)

23. (Currently Amended) A gas separator for separating a specific gas from a mixed gas, comprising:

- an outer casing;

- a rotating body disposed inside the casing, the rotating body comprising a plurality of circumferentially arranged fan-shaped hollow blocks, each of the blocks having an interior portion with an inner wall surface;

- a gas absorption/releasing material for absorbing and releasing a specific gas from a mixed gas depending on temperature, disposed on the inner wall surface of each block;

- first and second independent gas flow path structures, wherein:

- the first gas flow path structure extends linearly from a gas supply port at a first end of the outer casing to an exhaust port at a second end of the outer casing and which passes through ~~and~~ an interior portion of at least one of the hollow blocks when it is between the gas supply port and the exhaust port, and

- the second gas flow path structure comprises:

- an introduction path formed at a substantially central portion of the rotating body, and

- first and second supply paths which are isolated from communication with the interior portions of the respective blocks and which extend between the respective blocks in directions perpendicular to a central axis of the rotating body, the first and second supply paths respectively interconnecting the introduction path with first and second discharge ports by way of first and second spaces located between the outer casing and portions of the outer peripheral portion of the rotating body;

- wherein:

- the introduction path and the first and second supply paths are divided into first and second sections and a first temperature control gas and a second temperature control gas flow respectively through the first and second sections to the

first and second discharge ports to establish first and second temperature zones within the outer casing,

wherein:

the discharge ports are disposed at opposed locations on the outer casing such that, with respect to the central axis of the rotating body, the sides of the casing on which the first and second discharge ports are respectively disposed constitute first and second areas wherein the respective blocks of the rotating body are exposed to the first temperature zone when passing the first area for release of the specific gas absorbed by the gas absorption/releasing material therein, while, the blocks of the rotating body are exposed to the second temperature zone, when passing the second area, whereby gas passing through the first gas flow path passes through an interior of each block and the specific gas in the mixed gas is absorbed by the absorption/releasing material,

wherein the rotating body has:

a hollow static portion which extends along an axis about which the rotating body is rotatable, the hollow static portion being divided into two sections to divide the introduction path into first and second portions for the first temperature gas and the second temperature gas respectively, and

sealing portions which are disposed between the static portion and the rotating body and between the rotating body and the casing so as to seal and separate the first and second portions of the introduction supply path through which the first and second temperature adjusting fluids respectively flow,

wherein:

the rotating body rotates through a plurality of rotational positions,

wherein:

the mixed gas is fed to the gas absorption/releasing material at a first rotating position of the rotating body which is located in the first temperature zone, the specific gas is released from the gas absorption/releasing material at a second rotational position of the rotating body which is located in the second temperature zone, and wherein:

blocking positions which are located in the casing between the first rotational position and the second rotational position, block communication between the first and second rotational position.

24.-32. (Cancelled)

33. (Currently Amended) A gas separator ~~according to claim 32,~~ comprising:
a circular rotating body formed of a plurality of fan shaped blocks, each of the blocks having opposed open flat faces in which openings are respectively formed which permit gas to flow through a hollow interior of the block, each block having non-perforate curved inner and outer edges and non-perforate radially extending flat sides which are angled with respect to one another, the non-perforate flat sides cooperating to define temperature adjustment passages through which temperature adjusting fluids flow and exclusively contact external surfaces of the block and change the temperature of the blocks;

an essentially cylindrical casing in which the rotating body is disposed, the casing having first and second axial ends in which a gas inlet port and a gas outlet port are respectively formed so that gas flows axially through a segment of the housing and through the fan shaped blocks which rotate into the segment; and

a stationary tubular member which is disposed coaxially along an axis about which the circular rotating body is rotatable, the tubular member being divided into two halves which respectively define first and second separate elongate passages that respectively carry flows of first and second temperature control fluids and which respectively deliver the first and second temperature control fluids respectively to first and second temperature adjustment fluid discharge ports which are formed in a curved side of the cylindrical housing and on essentially opposite sides of the cylindrical housing via selected temperature adjustment passages, thus establishing two segment-shaped temperature zones within the cylindrical casing on opposite sides of the stationary ~~tublar~~ tubular member.

34. (New) A gas separator according to claim 10, wherein the first temperature zone is configured to be heated to a temperature of over approximately 700°C by the first temperature control gas while the second temperature zone is configured to be heated to a temperature of approximately 500°C by the second temperature control gas.